CLAIMS

1. An electroacoustic transducer (10) comprising

- a magnetic circuit (20) of a magnetically conductive material with a pair of opposed surfaces ((27, 29) or (25, 29a)) defining a gap (28) therebetween, the magnetic circuit (20) comprising a magnet (26) inducing a magnetic field in the gap (28), the magnet (26) having a surface (29 or 29a) constituting one of the opposed surfaces,

- a diaphragm (40), and

- a coil (30) having electrically conducting paths secured to the diaphragm (40), the coil (30) having portions (34) of its paths situated in the gap (28).

2. A transducer (10) according to claim 1 wherein the magnetic circuit (20) has two pairs of opposed surfaces ((27, 29) or (25, 29a)) defining first and second gaps (28), and wherein the coil (30) has first and second gap portions (34) of its paths situated in respective ones of the first and second gaps (28), and bridging portions (35) of paths interconnecting the first and second gap portions (34) of paths, the coil (30) being secured to the diaphragm (40) at the bridging portions (35).

3. A transducer (10) according to claim 2, wherein each pair of opposed surfaces ((27, 29) or (25, 29a)) are substantially plane surfaces being substantially parallel to each other.

4. A transducer (10) according to claim 1, wherein the magnetic circuit (20) comprises a body of magnetically soft material (21, 22, 23) with two openings (24) therein, each opening (24) having a pair of opposed surfaces ((27, 29) or (25, 29a)) defining respective ones of the first and second gaps (28).

5. A transducer (10) according to claim 4, wherein each magnet (26) is attached to the magnetically soft material (21) so as to form gaps (28) between surface (27) of magnetically soft material (23) and surface (29) of magnets (26).

6. A transducer (10) according to claim 4, wherein each magnet (26) is attached to the magnetically soft material (23) so as to form gaps (28) between surface (25) of magnetically soft material (21) and surface (29a) of magnets (26).

7. A transducer (10) according to claim 4, wherein the openings (24) in the magnetic circuit (20) are through-going, and wherein the magnetically conductive material (21, 22, 23) defines respective magnetic return paths between each pair of opposed of surfaces ((27, 29) or (25, 29a)) defining a gap (28).

8. A transducer (10) according to claim 1, wherein diaphragm (40) has electrically conductive portions (41), and wherein coil (30) has electrically conducting path ends (31) electrically connected to the electrically conductive portions (41) of the diaphragm (40), the electrically conductive portions (41) further having externally accessible portions for electrically terminating the transducer.

9. A coil (30) for use in a transducer (10) according to claim 1, the coil (30) comprising bridging portions (35) defining a bridging plane having a substantially flat surface for securing the coil (30) to the diaphragm (40), and gap portions (34) outside the bridging plane, each gap portion (34) comprising a plurality of electrically conducting segments being substantially parallel to the bridging plane.

10. A coil (30) according to claim 9, wherein the electrically conducting segments in the gap portions (34) are substantially linear.

11. A coil (30) according to claim 9, wherein the coil (30) is formed by a wounded electrically conducting wire.

12. A coil (30) according to claim 9, wherein the coil (30) is formed by electrically conducting paths formed on a flexible circuit board.

13. A method of manufacturing a coil (30) from an electrically conducting wire, the method comprising

- producing, from an electrically conducting wire, a coil defining a coil axis,

- bending the coil (30) around two bending axes (33) perpendicular to the coil axis.

14. A magnetic circuit (20) for use in an electroacoustic transducer (10) according to claim 1, the magnetic circuit comprising a magnetically conductive material with a pair of opposed surfaces ((27, 29) or (25, 29a)) defining a gap (28) therebetween, the magnetic circuit (20) comprising a magnet (26) inducing a magnetic field in the gap (28), the magnet (26) having a surface (29 or 29a) constituting one of the opposed surfaces, the gap (28) being adapted to receive portions of a coil.

15. A magnetic circuit according to claim 14, wherein the magnet circuit (20) has two pairs of opposed surfaces ((27, 29) or (25, 29a)) defining first and second gaps (28).

16. A magnetic circuit (20) according to claim 15, wherein each pair of opposed surfaces ((27, 29) or (25, 29a)) are substantially plane surfaces being substantially parallel to each other.

17. A magnetic circuit (20) according to claim 14, wherein the magnetic circuit (20) comprises a body of magnetically soft material (21, 22, 23) with two openings (24) therein, each opening (24) having a pair of opposed surfaces ((27, 29) or (25, 29a)) defining respective ones of the first and second gaps (28).

18. A magnetic circuit (20) according to claim 17, wherein each magnet (26) is attached to the magnetically soft material (21) so as to form gaps (28) between surface (27) of magnetically soft material (23) and surface (29) of magnets (26).

19. A magnetic circuit (20) according to claim 17, wherein each magnet (26) is attached to the magnetically soft material (23) so as to form gaps (28) between surface (25) of magnetically soft material (21) and surface (29a) of magnets (26).

20. A magnetic circuit (20) according to claim 19, wherein the openings (24) in the magnetic circuit are through-going, and wherein the magnetically conductive material (21, 22,23) defines respective magnetic return paths between each pair of opposed of surfaces ((27, 29) or (25, 29a)) defining a gap (28).

21. A magnetic circuit (20) according to claim 14, wherein the coil (30) is formed by a wounded electrically conducting wire.

22. A magnetic circuit (20) according to claim 14, wherein the coil (30) is formed by electrically conducting paths formed on a flexible circuit board.

23. A magnetic circuit according to claim 22, wherein the flexible circuit board forms part of a diaphragm.

24. A transducer (10) according to claim 1, further comprising a casing (50) for housing the magnetic circuit (20), the casing (50) comprising a rectangular-shaped opening being defined by two pairs of edges, the diaphragm (40) being attached to the casing (50) in a manner so as to at least partly cover the rectangular-shaped opening.

25. A transducer (10) according to claim 24, wherein the diaphragm (40) has a rectangular shape so as to cover the rectangular-shaped opening of the casing (50).

26. A transducer (10) according to claim 24, wherein the diaphragm (40) is attached to one of the two pairs of edges of the casing (50).

27. A transducer (10) according to claim 24, wherein the diaphragm (40) is attached to both pairs of edges of the casing (50).